



INSTALLATION and USER MANUAL



ZVP-VDA-321-4

Video Distribution Amplifier

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Safety Precautions

1. Carefully read this Product Manual prior to commencing installation and configuration.
2. Before working on this product power it down and remove the power leads. Removing panels modules or PCBs may cause damage to the product and present an electric shock and fire hazard.
3. To reduce the risk of electric shock and fire hazard do not operate this product with panels or covers removed.
4. Do not install or operate the product near water.
5. Do not install or operate this equipment outdoors.
6. Only install this equipment into a suitable 19-inch equipment cubicle.
7. If work is carried out on the product with panels and covers removed ensure full electrostatic handling procedures are adhered to.
8. Louvers and openings are provided in the product enclosures for ventilation purposes to protect it from overheating. Under no circumstances block or cover these openings.
9. Ensure the product is operated in a suitably temperature controlled environment within the specification limits.
10. Do not operate the product in humidity greater than 90%.
11. Do not drop objects of any kind through the product louvers and openings. This may cause electric shock and fire hazard and product malfunction.
12. Avoid liquid spillages on the product. This may cause electric shock and fire hazard as well as product malfunction.
13. Never attempt to service this product yourself. This product contains no serviceable parts refer all servicing requirements to the Meyertech Service Centre or appointed Meyertech Service Agent
14. Do not operate this product if
 - 14.1. Any product power leads are damaged.
 - 14.2. If the product has been exposed to rain.
 - 14.3. If the product has been dropped or the enclosure has been damaged.
 - 14.4. If liquid has been spilt on the product.
 - 14.5. If the appliance has malfunctioned or is not operating to its functional specification.
 - 14.6. If the products cooling fans fail to operate.
15. This product must only be operated with the power supply provided or if supplied without a power supply, by the type of power source indicated in the specification.
16. Follow all warnings and instructions marked on the product and in this manual.
17. To clean the enclosure of the product, use a cloth. Do not use liquid solvent-based cleaners.

The information in this manual is believed to be accurate and reliable. However, no responsibility or liability is assumed by Meyertech Limited for its use, or for any infringement of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or other rights of Meyertech. All specifications are subject to change without prior notice.



WARNING: This product may contain hazardous mains voltages. When working on this product use extreme caution and observe Health and Safety at work practices.

THIS PRODUCT MUST BE EARTHED!

Introduction

Thank you for purchasing this product. The following instructions will guide you through the installation, and configuration of the ZoneVu Video Distribution Amplifier ZVP-VDA321-4. Please read this manual carefully before attempting to install and operate the product to ensure that you obtain the optimum performance from it.

Features

To complement the high video densities available when using Meyertech's Series 3 Video Matrix, Meyertech have produced a complementary Video Distribution Amplifier.

- **High Density video distribution, 16 inputs and 128 outputs in 5U**
- **Bridge through video inputs as standard**
- **Ultra compact space saving design**
- **Front panel LED display**
- **-3dB Bandwidth of over 150MHz**
- **AGC**
- **Output short-circuit protection**
- **Very low Differential Phase and Gain error**
- **Industry standard BNC video connections**
- **Compatible with the ZoneVu product range**

The ZVP-VDA-321-4 has been designed to complement the Series 3 matrix but can be used in any solution that requires video distribution.

Functionality

The ZVP-VDA-321-4 is a multi-channel 1-in to 4-out video distribution amplifier with built in AGC.

Each video input has a bridging connection to allow the video input to be daisy-chained. Where the unit is at the end of the chain, then the bridged input should be used to terminate the video signal with a suitable 75R termination plug.

The AGC function operates on the video sync pulse and will scale the entire video signal to restore that level to 0.3Volt. The AGC operates within the ranges detailed in the specification section at the end of this document.

ZVP-VDA Modules

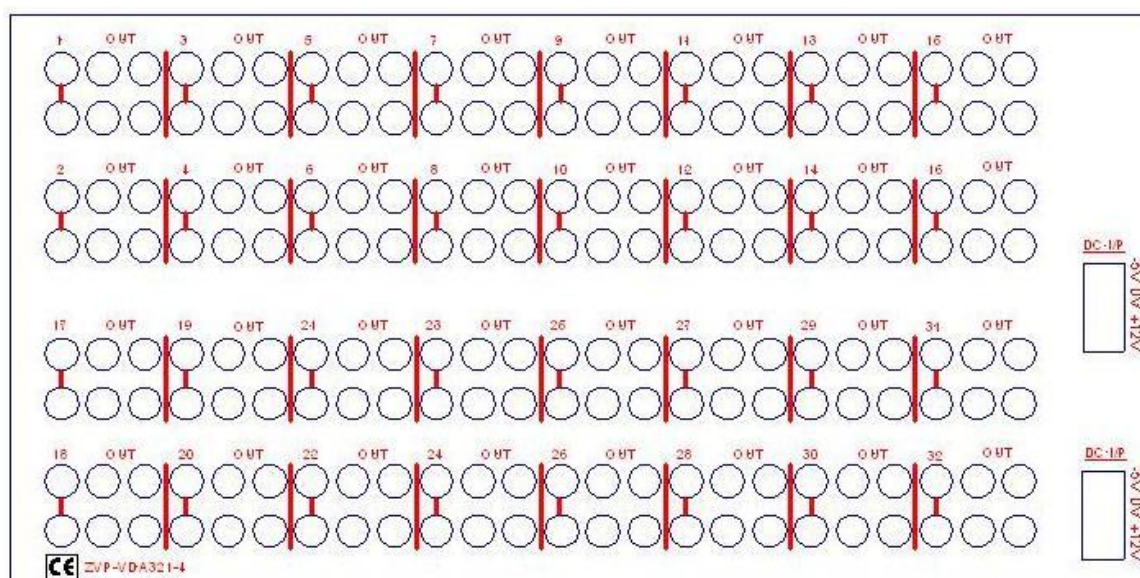
Overview

External

Table detailing the function of the ZVP-VDA front panel LEDs

STATUS LED	FUNCTION
-5V DC Colour - Green	Normal status on. Off indicates the failure of the -5V DC power supply.
+12V DC Colour - Red	Normal status on. Off indicates the failure of the +12V DC power supply.

Diagram showing the back panel of a ZVP-VDA-321-4



The rear panel of the ZVP-VDA-321-4 contains connections for the input of video signals; the looping through of video signals to other equipment; the video outputs and two power supply connectors.

One hundred and ninety-two **Video Connectors** arranged in sets of six are located on the backpanel. Each set of connectors consists of two connectors which present a Hi Z (high impedance) to the video input signal allowing it to be looped through to other equipment. When the ZVP-VDA is the last piece of equipment being connected, from a video input perspective, a 75R terminator should be used to terminate each video input. The remaining connectors are the distribution outputs, four per input. Each output will drive into a 75R load. All BNC connectors are the standard size type.

Two high current **Power Connector**, three terminals, are available to carry power to the ZVP-VDA-321-4. The ZVP-VDA requires a +12V and –5V DC supply. The ZVS-PSU range of modules generate these supplies separately.

The second Power Connector is provided to ease power distribution for an additional low power Meyertech unit (eg ZSC-1000plus)

Internal

Removing the front panel of the ZVP-VDA reveals its inner construction and in particular the video distribution cards and the units motherboard.

The internal video distribution cards are held securely in place via a retaining plate. To access the 8 distribution cards this plate needs to be extracted by removing the 4 retaining screws located at the sides.

The VDA cards receive power through the back panel. This in turn receives power from the motherboard mounted in the units base

The motherboard also incorporates a 20-way header and lead providing power and control signals for the front panel LED PCB.

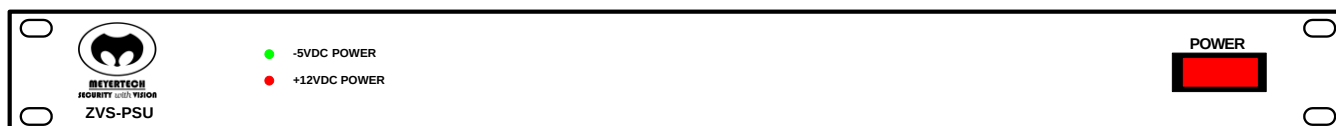
Table detailing ZVP-VDA-321-4 component PCBs

PCB	FUNCTION
P124-001	Video connection inner back-plane
P122-001	Video distribution card 4x4
QMD-75-A	PSU and display driver
QMD-81-A	Front panel display

The ZVS-PSU-R

The **ZVS3-PSU-R** power supply module is a common module used throughout the system to provide DC power to the ZVP-VDA-321-4. The 1U 19-inch module has been designed to fit into a 19-inch equipment cubicle.

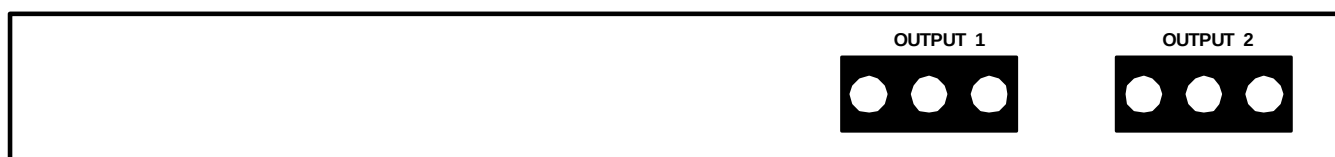
Drawing showing the front panel of a ZVS-PSU-R



From a universal AC mains supply (99VAC to 264VAC 50Hz) the ZVS3-PSU provides +12VDC and –5VDC. Two separate parallel power outputs are provided to aid installation, which is shown, in the diagram below. The ZVS3-PSU-R modules themselves are switched mode type, which are significantly more efficient than linear PSUs. The benefits derived from employing a switched mode supply are threefold

1. Greater efficiency means reduced size.
2. Greater efficiency means reduced heat generation.
3. They are 'Greener' than linear supplies.

Diagram showing the rear panel of a ZVS-PSU-R with DC Power connector detail



Meyertech provide as an option a dual-redundant PSU (ZVS-PSU-RD) – please contact Meyertech Sales for more details.

Installation

Your ZoneVu ZVP-VDA-321-4 can be supplied in a 19-inch equipment cubicle (or cubicles), pre-cabled, fitted with termination plugs and bridging cables depending on the size of the video system, or as individual ZVP-VDA-321-4 modules.

There is no requirement to access the internals of the unit and no requirement for any configuration.

The unit incorporates a front mounted fan through which air is sucked, this area should not be obstructed.

Specifications

Operating temperature	Storage -10 ⁰ to +60 ⁰ C Operational 0 ⁰ to +50 ⁰ C Humidity 10% to 95% non-condensing
Enclosure	Eurorack standard. Aluminium and mild-steel construction.
Dimensions	19" rack by 5u by 380mm
Weight	9 kg
Power ZVS3-PSU	Input 99 to 264VAC 50Hz, Output +12VDC, -5VDC
Power Consumption	35W
Bandwidth –3dB	> 150 MHz
Bandwidth 0.1dB	40 MHz
Slew rate	1000V/uS
Differential gain error	0.2%
Differential phase error	0.2 degrees
X-talk (all hostile) @ 6MHz	> -60dB
AGC	+/- 6dB range
Video input connectors	Standard BNC with bridging
Video output connectors	Standard BNC x 4
Video input	0.5V to 2.0V p-p
Video output	1V p-p nominal
Video input impedance	75R nominal
Video output impedance	75R nominal
Module size	32 inputs by 4 outputs

Product Parts (with ordering codes)

System

ZVP-VDA321-4 Includes full population of P122-001 (x8)

Modules

P122-001 ZoneVu Video Distribution Card 4x4
 ZVS-PSU-R ZoneVu module PSU.
 ZVS-PSU-RD ZoneVu module dual-redundant PSU

Options and Expansion Cards

ZVS3-BC1-VRM ZoneVu Series 3 video input bridging cable. Standard BNC connectors,
 mini-coax 1 metre length.
 ZVS3-T75-VRM ZoneVu Series 3 video input 75Ohm termination plugs.

Servicing and Support

Servicing

The PRODUCT requires no Planned Preventive Maintenance periods (PPMs), as it is mainly solid state in design.

The PRODUCT contains no serviceable parts and should be returned to our Service Centre in Scunthorpe for repair or replacement under warranty. Any repairs, attempted repairs or replaced components not carried out by the Meyertech Service Centre will void all Meyertech warranties and liabilities.

If your PRODUCT has to be returned to our Service Centre please follow the returns procedure below, otherwise delays may be incurred in returning or replacing the PRODUCT.

Support

At Meyertech our staff understand quality support is important to you, vital in fact, which is why we place such a high precedence on providing it.

For all matters relating to support go to our website to find the information your require visit <http://www.meyertech.co.uk/support.html>

Diagnostics

Symptom	Likely cause	Solution
No video output on selected channels	A video distribution card is not installed	Verify internally that all video distribution cards are securely fitted. To replace any components contact Meyertech Service Centre .
No AGC	1. Video signal out of range 2. video distribution card failure	Verify the presence of a video signal. Confirm the failure of a video distribution card by verifying video signal though a different channel. To replace any components contact Meyertech Service Centre .
No video on any outputs	Power supply problem.	Verify both Power LEDs on front panel

Disposal

There are no additional requirements beyond safe working practice in the decommissioning of the Meyertech Video Distribution Amplifier.

However the ZVP-VDA-321-4 contains printed circuit boards populated with electronic components. The whole unit must be returned to **Meyertech Service Centre** for final disposal. Please follow the normal returns procedure.

Shipping and Handling

- The ZVP-VDA-321-4 must always be transported with the internal retaining plate fitted.
- In order to remove video distribution cards from their module, the retaining plate will need to be removed first.
- Meyertech holds no responsibility for damaged equipment though unsuitable transportation or handling.

Warranty

Please refer to Meyertech Limited 'Terms & Conditions of Sale of Goods & Services' for interpretation.

1. If the Buyer establishes to the Seller's reasonable satisfaction that there is a defect in the materials or workmanship of the Goods manufactured, then the Seller shall at its option, at its sole discretion and within a reasonable time,
 - a. arrange for the repair or making good such defect or failure in such Goods free of charge to the Buyer (including all costs of transportation of any Goods or materials to and from the Buyer for that purpose),
 - b. replace such Goods with Goods which are in all respects in accordance with the Contract, or subject, in every case, to the remaining provisions of this Condition 1 provided that the liability of the Seller under this Condition 1 shall in no event exceed the purchase price of such Goods and performance of anyone of the above options shall constitute an entire discharge of the Seller's liability under this warranty.
2. Condition 1 shall not apply unless the Buyer:
 - a. notifies the Seller in writing of the alleged defect within 12 (twelve) months from delivery or such other period or periods as may be agreed in writing between the Seller and the Buyer, and
 - b. allows the Seller a reasonable opportunity to inspect the relevant Goods.
3. For the avoidance of doubt, the Seller shall be under no liability under the warranty in Condition 1 above:
 - a. where such defects arise from any drawing, design or specification supplied by the Buyer; or
 - b. where such defects arise from fair wear and tear, wilful damage, or negligence of a party other than the Seller (or its employees or authorised personnel), abnormal working conditions, failure to follow the Seller's instructions (whether oral or in writing), misuse or alteration or repair of the Goods without the Seller's approval; or
 - c. where such defects arise in parts, materials or equipment which have not been manufactured or designed by the Seller but have been purchased at the Buyer's request by the Seller from the Buyer's designer and manufacturer or from some other third party (the **"Third Party Supplier"**).
 - d. if the total price of the Goods has not been paid by the due date for payment
 - e. in respect of any type of defect, damage or wear specifically excluded by the Seller by notice in writing; or
 - f. if the Buyer makes any further use of the Goods after giving notice in accordance with Clause 1
4. Any repaired or replaced Goods shall be redelivered to the Buyer free of charge to the original point of delivery but otherwise in accordance with and subject to these Conditions.
5. Alternatively to Condition 1 the Seller shall be entitled at its absolute discretion on return of the defective Goods to the Seller (at the Seller's request) to refund the price of the defective Goods in the event that such price shall already have been paid by the Buyer to the Seller, or, if such price has not been paid, to relieve the Buyer of all obligation to pay the sum by the issue of a credit note in favour of the Buyer in the amount of such price.
6. In respect of all Goods supplied to the Seller by a Third Party Supplier the Seller will on request pass on to the Buyer (in so far as reasonably possible) the benefit of any warranty given to the Seller by such Third Party Supplier and will (on request) supply to

the Buyer details of the terms and conditions of such warranty and copies of any relevant product information sheets, technical data sheets or product leaflets issued by such Third Party Supplier and the Buyer shall be solely responsible to the entire exclusion of the Seller for complying with the same.

7. For the purposes of Condition 1 references to Goods shall be deemed to exclude software.
8. The Buyer acknowledges that software in general is not error-free and agrees that the existence of such errors in the Software Programs shall not constitute a breach of this Contract.
9. In the event that the Buyer discovers a material error which results in the Programmed Products not performing substantially in accordance with the Functional Specification, or the Licensed Programs not performing substantially in accordance with the relevant Program Documentation and notifies the Seller of the error within 90 days from the date of the Seller making available the respective software to the Buyer (the "**warranty period**") the Seller shall at its sole option either refund the price which the Buyer has paid to the Seller (or if such price has not been paid, relieve the Buyer of all obligations to pay the sum) in respect of the respective software or use all reasonable endeavours to correct by patch or new release (at its option) that part of the software which does not so comply provided that such non-compliance has not been caused by any modification, variation or addition to the software not performed by the Seller or caused by its incorrect use, abuse or corruption of the software by use of the software with other software or on equipment with which it is incompatible,
10. To the extent permitted by English law, the Seller disclaims all other warranties, with respect to the software which it provides pursuant to the Contract, either express or implied, including but not limited to any implied warranties of satisfactory quality or fitness for any particular purpose.
11. The Buyer is solely responsible for various scanning the software that it receives from the Seller pursuant to the Contract.
12. The Seller warrants that it will use reasonable skill and care in providing the Services to the buyer